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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,766	11/02/2001	Antti Ruha	872.0100.U1(US)	7390
29683 7590 05/17/2007 HARRINGTON & SMITH, PC 4 RESEARCH DRIVE SHELTON, CT 06484-6212			EXAMINER TRAN, PABLO N	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 05/17/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/005,766	RUHA ET AL.	
	Examiner	Art Unit	
	Pablo N. Tran	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 25-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15, 17-24, 39-41 and 43-51 is/are rejected.
- 7) ☒ Claim(s) 4, 16, and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 14, and 40 recites the limitation said other IC". There is insufficient antecedent basis for this limitation in the claim.

3. Claims 2, 14, and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 2, 14, and 40, the claimed limitation, "a first pair of adjacently disposed conductors" and "a second pair of adjacently disposed conductors" rendered the limitation indefinite. According to the specification, especially figure 3-4 and figure 6-14, the drawings show that there is a pair of conductor (w1, w2) connected between the transmitter (12) and receiver (14). The examiner will interpret as a pair of conductor for data transmission between the transmitter (12) and receiver (14) and examine as such.

4. Claims 3, 15, and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 3, 15, and 41, the claimed limitation, "wherein said transmitter circuitry and said receiver circuitry are selectively configured by switches for operating

under a condition..." rendered the limitation indefinite. The claims stated the condition for the switches but do not specifically stated the operating mode of the switches.

Appropriated correction required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 5-14, 17-24, 39-40, and 43-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over anticipated Young (6,346,832) in view of Moyer (6,566,911).

As per claims 1, 5-6, 13, 17, and 23, 39, and 43-44, Young disclosed a multi-mode Input/Output circuit for transmitting and receiving data between integrated circuits wherein each IC having at least one of transmitter circuitry (fig. 1/no. 10) and receiver circuitry (fig. 1/no. 12), that are selectively interconnected together by switches to operate as single-ended, voltage mode links, and as a single differential voltage mode link (col. 4/ln. 9-14).

Young disclosed such pair of conductor being utilized as single-ended mode but not explicitly as two single-ended mode. However, Moyer suggested such method (abstract). Therefore, it would have been obvious to one of ordinary skill in the art to provide such switching mode, as taught by Moyer, to the Multi-Channeling Apparatus of

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Young in order provide a flexible interface signaling for an integrated circuit and save cost.

The modified communication apparatus of Young and Moyer further disclosed the I/O circuits are constructed of CMOS-based transistors (see Moyer, abstract).

As per claims 2, 14, and 40, the modified communication apparatus of Young and Moyer further disclosed the transmitter sends data to the receiver in another IC over a pair of adjacently disposed conductors (see Young, fig. 1/wire 1 & 2, see Moyer, fig. 4/ pad 54 & 56).

As per claims 7, 18, and 45, the modified communication apparatus of Young and Moyer further disclosed single-ended current mode (see Moyer, col. 5/ln. 16-col. 6/ln. 39).

As per claims 8, 19 and 46, the modified communication apparatus of Young and Moyer further disclosed a single differential voltage mode with single-ended input drive (see Young, col. 3/ln. 56-col. 4/ln. 14, see Moyer, col. 5/ln. 42, col. 7/ln. 30-38).

As per claims 9, 20, and 47, the modified communication apparatus of Young and Moyer further disclosed single differential voltage mode with differential input drive (see young, col. 3/ln. 56-col. 4/ln. 14, see Moyer, col. 4/ln. 21-23).

As per claims 10, 21, and 48, the modified communication apparatus of Young and Moyer further disclosed single differential current mode with single-ended input drive (see Moyer, col. 4/ln. 21-23).

As per claims 11, 22, and 49, the modified communication apparatus of Young and Moyer further disclosed single differential current mode with differential input drive (see Moyer, col. 4/ln. 19-col. 5/ln. 8).

As per claims 12, 24, and 50, the modified communication apparatus of Young and Moyer further disclosed switches are provided to convert said I/O into either transmitter or receiver circuitry (see Moyer, abstract, col. 1/ln. 8-22).

7. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified communication apparatus of Young and Moyer and further in view of Pena-Finol et al. (5,832,370).

As per claim 51, the modified communication apparatus of Young and Moyer does not specifically teaches that the IC comprises of RF and where at least one of said IC is a base-band IC. However, Pena-Finol et al. teaches such IC (fig. 2). Therefore, it would have been obvious to one of ordinary skill in the art to provide such RF IC, as taught by Pena-Finol et al. to the modified communication apparatus of Young and Moyer in order to provide a compact-cost effective communication apparatus that facilitates communication without interference.

Allowable Subject Matter

8. Claims 3, 15, and 41 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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9. Claims 4, 16, and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments with respect to claims 1, 13, and 39 have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

12. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (571)272-7898. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) System. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-directauspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PABLO N. TRAN
PRIMARY EXAMINER

May 10, 2007



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